

REMARKS

Claims 1, 5, 7 to 20, 22 to 32, 37, 39 to 43, 45 and 46 are pending, of which claims 1, 8, 26, 30, 37 and 41 are independent.¹ Favorable reconsideration and further examination are respectfully requested.

As shown above, claims 8, 26 and 41 have been rewritten into independent form, as kindly suggested by the Examiner. Some formal changes have also been made to these claims, which are not believed to affect their allowability.

The claims, specification, and drawings have been amended, as shown above, to address the issues on pages 2 to 4 of the Office Action.

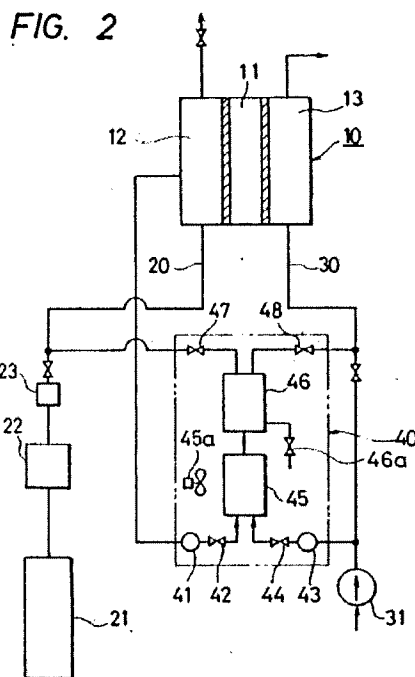
Claims 1 to 7, 10 to 25, 28 to 40 and 42 to 49 were rejected over Tajima (U.S. 4,657,828). As shown above, independent claim 1 has been amended to recite a recirculation conduit extending between the fuel delivery outlet and the mixing point, where the mixing point comprises either (i) a reaction chamber for reacting fuel, or (ii) a pre-mixing chamber, and where the mixing point is for mixing fuel from the fluid flow regulator with oxidant species from the recirculation conduit. Tajima is not understood to disclose or to suggest at least this feature.

In this regard, page 7 of the Office Action states the following:

the fuel cell system further comprising a recirculation conduit extending between the fuel delivery outlet and a mixing point in the fuel delivery inlet (as shown in Figure 2) (abstract, col. 1: 19-33 and col. 2: 50-col. 4: 25).

¹ The Examiner is urged to independently confirm this recitation of the pending claims.

However, as we understand it, in Fig. 2 of Tajima (below), there is no recirculation conduit extending between the fuel delivery outlet and the mixing point where, at the mixing point, fuel from the fluid flow regulator is mixed with oxidant species from the recirculation conduit.



More specifically, as we understand it, in Fig. 2, “the waste gas...derived from the fuel system [is] mixed with air and the mixture is subjected to contact burning so as to produce combustion gas to be used as replacement gas”². This appears to occur via the line extending from the left portion of anode 12, although Tajima is not entirely clear on this point. In any case, the alleged equivalent to the “mixing point” of Tajima, namely burner 45, is not part of the fluid flow inlet, nor does it mix fuel from the fluid flow regulator. Rather, in Tajima, fuel is output from source 21, via reformer 22 and denaturalizer 23 to anode 20. At no point does the fluid from source 21

² Col. 2, lines 21 to 24 of Tajima

reach burner 45; accordingly, burner 45 cannot be equated to the claim's mixing point. For at least these reasons, the line on the left side of anode 12 also cannot be equated to the claim's recirculation conduit extending between the fuel delivery outlet and mixing point.

For at least the foregoing reasons, claim 1 is believed to be patentable.

Independent claim 30 recites that the fuel delivery conduit further comprises a recirculation conduit to supply oxidant from an output of the fuel cell to the reaction chamber, and that the reaction chamber is configured to mix fuel from the fuel supply inlet with oxidant species from the recirculation conduit. Since the reaction chamber is claimed to mix fuel from the fuel supply inlet, burner 45 could not possibly correspond to the reaction chamber (since burner 45 does not receive fuel from source 21). Thus, claim 30 is believed to be patentable.

Claim 37 recites recirculating fluid within the fluid delivery conduit to a mixing point upstream of the active surface area of the anode, and effecting a controlled combustion of fuel and oxidant species within the fuel delivery conduit at the mixing point. As explained above, Tajima does not show a mixing point which effects a controlled combustion of fuel and oxidant species recirculated within a fluid delivery conduit. Claim 37 is thus believed to be patentable.

The dependent claims are also believed to define patentable features of the invention. Each dependent claim partakes of the novelty of its corresponding independent claim and, as such, each has not been discussed specifically herein.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above

may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.


In view of the foregoing amendments and remarks, we respectfully submit that the application is in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

The undersigned attorney can be reached at the address shown below. All telephone calls should be directed to the undersigned at 617-521-7896.

Please apply any fees or credits due in this case to Deposit Account 06-1050 referencing Attorney Docket No. 17638-003US1.

Respectfully submitted,

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Paul A. Pysher
Reg. No. 40,780

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110-2804
Telephone: (617) 542-5070
Facsimile: (617) 542-8906